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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,528	11/14/2003	Daniel F. Sievenpiper	B-4345CIP 621324-5	2213

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EXAMINER

TAKAOKA, DEAN O

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H-1

Office Action Summary

Application No.

10/714,528

Applicant(s)

SIEVENPIPER, DANIEL F.

Examiner

Dean O. Takaoka

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 and 15-37 is/are allowed.
- 6) ☒ Claim(s) 12-14, 38 and 39 is/are rejected.
- 7) ☒ Claim(s) 40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/23/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference number "13" (Figs. 2b, 5b) has been used to designate both "bottom side" (page 6, line 27) or "back side" (page 10, line 17) and "wires" (page 10, line 2).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "surface 9" (page 7, lines 2, 24, and 26) does not appear to be shown in the figures.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: reference number 41 (Fig. 7).

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 28 is objected to because of the following informalities: The use of the word "said" (i.e. said plurality of RF strip lines – line 23) suggests a previous recitation where only "RF lines" has been previously recited in the claim, thus comprising improper antecedent basis.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 12 – 14 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 12 – 14 of copending Application No. 10/436,753. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Gothard et al. (2002/0036586), prior art submitted by Applicant's IDS dated (August 23, 2004).

Claim 12:

Gothard et al. shows a plurality of switch units (Fig. 9), each switch unit having at least two MEMS switches (plural assisting switches 905, 910 shown in Fig. 9) coupled to a central point (920), the at least two MEMS switches of the switch unit being arranged to couple selectively at least two transmission line ports to the central point (where separate transmission lines 925 and/or 930 each comprise two ports, i.e. input and output of each transmission line; or in the alternative where Gothard et al. teaches one or two antennas being active – 0035, thus comprising two active branches each comprising two switches and two transmission lines for each branch), and at least a third MEMS switch coupled to the central point (any of the other switches 905, 910 of

the other adjacent branches) and adapted to be connected to a central point (920) associated with an adjacent one of the plurality of switch units.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gothard et al. in view of Ito et al. (U.S. Patent No. 6,337,668).

Claim 38:

Gothard et al. (Fig. 9) shows a plurality of MEMS switches arranged on a substrate about a common RF port (common RF port defined as combiner 920 connected to signal 940), the RF port having a centerline and each MEMS switch being disposed spaced equidistantly from the centerline of the RF port (Fig. 9 with respect to Fig. 3); and connections for connecting an RF contact of each one of the MEMS switches with the common RF port (where connections of the switches 905, and combiner 920 and signal line 935 are shown in Fig. 9) but is silent where the switches are spaced equidistantly by a length of less than one-quarter wavelength.

Ito et al. teaches a similar plural antenna array (Figs. 11 and 12) connected to switches (307 – 310) where the switches are spaced equidistantly by a length of less than one-quarter wavelength (where Ito et al. teaches the antenna elements being

spaced $1/8\lambda$ – col. 4, line 32, thus where connected switches are obviously connected less than $1/4\lambda$).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the generic switch distance disclosed by Gothard et al. with the specific switch distance of less than one-quarter wavelength disclosed by Ito et al. Such a modification would have been obvious for using the circular base plate dimensions of Ito et al. for implementing a small antenna apparatus capable of switching directivity in 2 directions (col. 4, lines 39-48; Ito et al.), thus suggesting the obviousness of the modification.

Claim 39:

Where the centerline of the RF port is disposed perpendicular to a major surface of the substrate (where n is perpendicular to 310 – Fig. 3).

Allowable Subject Matter

Claims 1 – 11 and 15 – 37 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Gothard et al. shows an antenna system for CDMA 2000 and 1eV-DO protocols (i.e. broadband) comprising plural antennas formed along an imaginary circle and further comprising a plurality of MEM switches but Gothard et al. does not teach the switches spaced along the imaginary circle where the circle has a diameter smaller than $1/2\lambda$ for all frequencies in a passband of the switch.

Ito et al. teaches a similar antenna system comprising plural antennas formed along an imaginary circle and further comprising a plurality of switches where Ito et al. further teaches antennas spaced along the imaginary circle where the circle has a diameter smaller than $1/4\lambda$ (e.g. $1/8\lambda$), thus where the connected switches are obviously connected less than $1/4\lambda$ (Fig. 10 and 11) but does not teach or suggest where the switches are spaced along the imaginary circle where the circle has a diameter smaller than $1/2\lambda$ for all frequencies in a passband of the switch (claims 1, 15, 28); thus the claims are found in condition for allowance.

Claim 40 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Swartz (NPL) – teaches CDMA2000 1xEV-DO being broadband technology.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O. Takaoka whose telephone number is (571) 272-1772. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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February 22, 2005